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(54) Title: METHOD FOR INVESTIGATING CYTOSINE METHYLATION IN DNA SEQUENCES BY MEANS OF HEMI-  
METHYLATION RESTRICTION ENZYMES

(57) **Abstract:** The following invention concerns an enzymatic method for investigating cytosine methylation in DNA sequences. The DNA to be investigated is hybridized to oligonucleotides. The hybrids are reacted with restriction enzymes, which are able to distinguish hemi-methylated DNA double strands either from unmethylated or from homogenously methylated DNA double strands. The occurrence or non-occurrence of restriction (and thereby methylation status of the cytosine positions to be investigated) can be determined by various techniques. The method is particularly suitable for the diagnosis of cell proliferative disorders (including cancer) and other diseases associated with a change of the methylation status as well as for the prognosis of undesired drug effects.

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